

First Stage Revision Using A Cement-Loaded Kuntscher Nail Spacer For Infected Peri-Prosthetic Fracture Following Hip Arthroplasty

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INTRODUCTION:

Peri-prosthetic hip fractures following hemi- and total hip arthroplasty is a complicated situation. With the addition of underlying infection and poor bone quality, the treatment options are further limited. This is compounded in the Malaysian public hospital setting as affordability of specific revision implants presents a burden on both patient and government resources. In this report, we outline our management strategy in a patient who had a 1st stage revision arthroplasty using a cemented Kuntscher nail spacer prosthesis¹ for an infected bi-polar hemiarthroplasty complicated by the presence of a peri-prosthetic fracture.

CASE REPORT:

A 66 year old lady, with known case of hyperparathyroidism, presented to us with intracapsular right femoral neck fracture, we manage her with right hip bipolar hemiarthroplasty. She was discharged 3 days after the operation. However, after 3 weeks postoperatively she presented again to us with complained of pus discharge from surgical site. Wound debridement was done which we found pus discharge and nonviable tissue. She complaint of right hip pain three days after debridement, our examination showed right lower limb shortened and tender. We proceed with pelvis and right hip x-ray to rule out right hip dislocation however plain radiograph shown she had right femur periprosthetic fracture Vancouver B1 (figure 1). She underwent a revision surgery, we removed her implant and intramedullary cement mantle via extended trochanteric osteotomy approach. Surgical site was debrided and washed with hydrogen peroxide and copious amount normal saline. Kuntscher nail was used as internal strut for cement hip spacer. The Kuntscher nail was bent at proximal part and mold with antibiotic loaded cement to form articulating cement spacer. Osteotomy site was then reduced and secured with circlage wire as shown in figure 2.

Figure 1:



Figure 2:



DISCUSSIONS:

Periprosthetic femoral fracture associated with acute infection of the hip remains one of the most feared and devastating arthroplasty complications. Prosthetic hip joint infections are usually treated with removal of the implant and girdlestone procedure. Previous studies suggested a two-stage revision hip replacement using an articulated spacer is the treatment of choice for a chronically infected total hip replacement.² The use of highly polished Exeter Stem cemented inside or alongside the Kuntscher nail has been reported for first stage revision hip arthroplasty for massive bone loss secondary to infection³. In view of associated femoral fracture for this case we use a longer Kuntscher nail to provide more stability compare to rush-pin. Once fracture united and infection subside we can plan second stage revision which is might be total hip replacement with long femoral stem.

CONCLUSION:

Two stage revision hip arthroplasty is preferred to allow time for infection to subside and fracture to heal. Delay second stage revision can be done once no sign of infection and plain radiograph show fracture united.

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